REPPERGER RESEARCH INTERN PROGRAM

RESEARCH PROJECT #: AFRL-RHW-23-10

Individualized Cognitive Load Modeling

PROJECT DESCRIPTION: The goal of the project is to better understand the causes and consequences of cognitive load in complex task environments. We employ behavioral and physiological (EEG, heart rate, and eye movement) methods to assess an individual's workload level. And we use models based in cognitive architectures to gain insights into the specific cognitive capacities involved (memory, perceptual processing, motor planning, etc.). By identifying these capacities, we can develop targeted interventions that address potential causes of high workload. The project will involve analysis of behavioral and physiological data to identify patterns in related to workload conditions, expanding on an existing cognitive model to improve predictions, and/or reviewing relevant literature.

ACADEMIC LEVEL: Master's, PhD

DISCIPLINE NEEDED:
- Psychology
- Neuroscience
- Mathematics

RESEARCH LOCATION: Virtual or In-Person at Wright-Patterson Air Force Base, Dayton, Ohio

RESEARCH MENTOR: Christopher Stevens, PhD
Psychology, Penn State University, 2014

Dr. Stevens is a research psychologist in the Cognitive Models branch of the Air Force Research Laboratory. At Penn State University, Dr. Stevens's research centered on spatial reasoning and metacognitive monitoring of such reasoning. After graduating from Penn State, Dr. Stevens worked as a postdoctoral fellow at the University of Groningen, where he led the effort to develop novel computational agents for training metacognitive skills in negotiation. He now leads research in the cognitive modeling of human performance across multiple levels of analysis.
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